



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/788,931	02/27/2004	James Gregory Schroth	GP-303037	9545
7590	04/24/2006		EXAMINER	
KATHRYN A MARRA			WOLFE, DEBRA M	
General Motors Corporation			ART UNIT	PAPER NUMBER
Mail Code 482-C23-B21, Legal Staff			3725	
P.O. Box 300				
Detroit, MI 48265-3000			DATE MAILED: 04/24/2006	

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/788,931	SCHROTH ET AL.	
	Examiner Debra Wolfe	Art Unit 3725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE \_\_\_\_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 03 March 2006.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1,4-7,9-11,13 and 14 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1,4-7,9-11,13 and 14 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 03 March 2006 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|  | 6) <input type="checkbox"/> Other: _____                                    |



## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

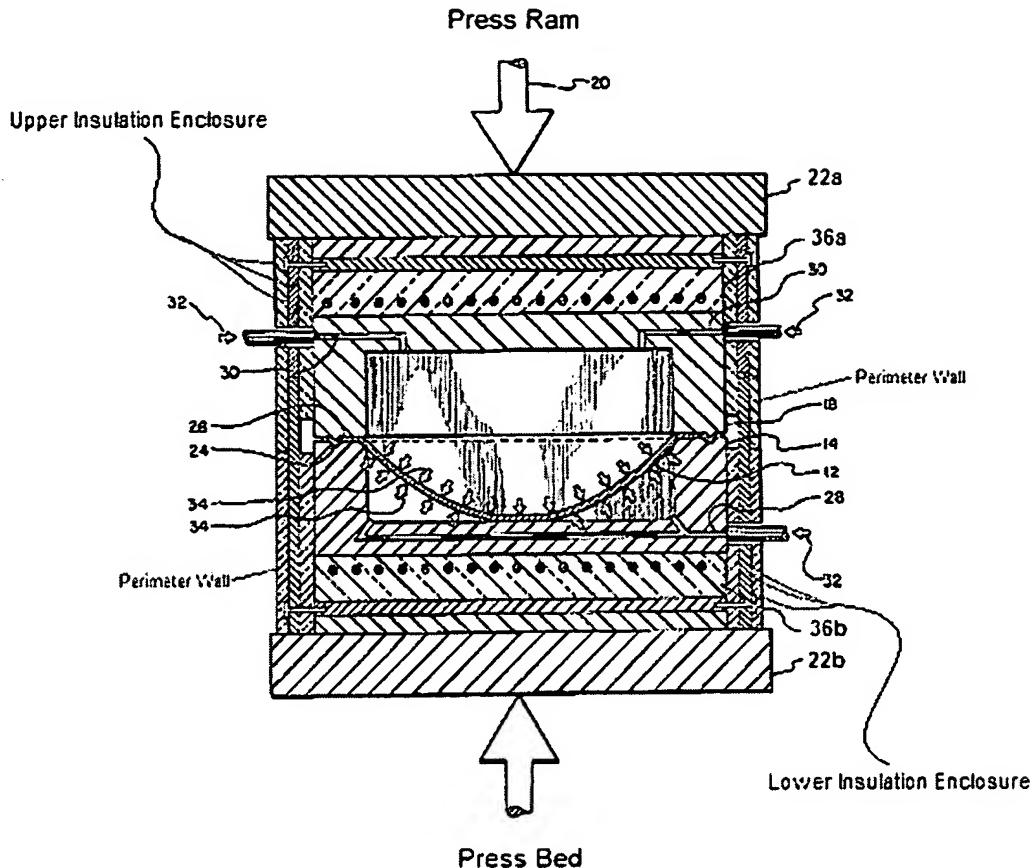
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 4, 7 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ghosh (U.S. Patent # 4,352,280) in view of Morse (U.S. Patent # 3,551,952). Ghosh discloses a compression forming apparatus for sheet material having an upper and lower heater plate (36) mounted to a non-heated press, via platens (22) mounted there between and to the press, wherein the heater plates are integrally heated; a first non-integrally heated forming tool (upper die portion 18) is mounted to the upper heater plate (36) and a second non-integrally heated forming tool (lower die portion 14) is mounted to the lower heater plate (36) whereby the forming tools (18, 14) are separately heated by the heater plates; a first and second insulation enclosure including a base portion positioned between each upper and lower heater plate and the presses (See col. 5, line 11) and a perimeter wall (See FIG below) surrounding each upper and lower heater plates and the first and second forming tools (18, 14). Ghosh discloses the invention substantially as claimed except for wherein the apparatus closes together such that a portion of one of the insulation enclosures fits within a portion of the other insulation enclosure to define a closed insulation vessel. However, Morse discloses a heat shielded press having a first insulation enclosure (14) including a base portion between a first heater plate (16) and the press (12) and a



perimeter wall and a second insulation enclosure (15) including a base portion positioned between the second heater plate (17) and the press (13) and a perimeter wall. Morse further discloses, as seen in figure 2, when the apparatus closes together a portion of the second insulation enclosure fits within a portion of the first insulation enclosure to define a closed insulation vessel. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the insulating plates of Ghosh with the insulation enclosures of Morse in order to eliminate heat loss to the surrounding environment.

With regards to claim 4, Morse discloses the use of a perimeter seal (51) mounted to the top (50) of the second insulation enclosure (15) and seals against the side of the first insulation enclosure (14). It would have been obvious to one having ordinary skill in the art at the time the invention was made to mount the seal (51) to the side of the first insulation enclosure (14) and seal against the top of the second insulation enclosure (15), since it has been held that rearranging parts of an invention involves only routine skill in the art. (*In re Japikse*, 86 USPQ 70)



2. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ghosh (U.S. Patent # 4,352,280) and Morse (U.S. Patent # 3,551,952) in view of Herdzina (U.S. Patent # 5,277,047). Ghosh in view of Morse discloses the invention substantially as claimed (See paragraph 1 of Claim Rejections – 35 USC § 103) except for wherein the apparatus further comprises at least one load-bearing spacer positioned between at least one heater plate and the press. However, Herdzina discloses a conversion system tooling heater having an insulating spacer (62; FIG 1) to minimize heat loss to the lower chase. As noted in paragraph 1 of the Claim Rejections – 35 USC § 103 section, Ghosh does provide insulating plates to hold the heaters against the die and to confine the heat to the die (See col. 5, line 11). Therefore it would have



been obvious to one of ordinary skill in the art at the time the invention was made to modify Ghosh with an insulating spacer as taught by Herdzina in order to confine the heat to the die and minimize heat loss.

3. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ghosh (U.S. Patent # 4,352,280) and Morse (U.S. Patent # 3,551,952) in view of Hammar et al (U.S. Patent # 6,810,709). Ghosh in view of Morse discloses the invention substantially as claimed (See paragraph 1 of Claim Rejections – 35 USC § 103) except for wherein at least one insulation enclosure is of non-load bearing insulation. However, Hammar et al discloses a heated metal forming tool having peripheral insulation (35) consisting of non-load bearing insulation (34) encapsulated in enclosures (50) (See col. 4, lines 1 - 4) for the purpose of reducing heat loss from the forming tool to the environment. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ghosh with the insulation enclosures having non-load bearing insulation as taught by Hammar et al in order to minimize and reduce heat loss to the outside environment.

4. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ghosh (U.S. Patent # 4,352,280) and Morse (U.S. Patent # 3,551,952) in view of Mahoney et al (U.S. Patent # 5,277,045). Ghosh in view of Morse discloses the invention substantially as claimed (See paragraph 1 of Claim Rejections – 35 USC § 103) except wherein the heater plate includes electrical resistance heating elements therein. Ghosh does discloses in Figure 2 the heater plates having some type of heating elements encompassed therein but does not specify what the elements are in the disclosure. However, Mahoney et al discloses an apparatus for super plastic forming of metals using a heater plate with resistance heaters (162) to heat the upper and lower



metallic housings (130, 140). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ghosh with resistance heating elements as taught by Mahoney et al in order to heat the forming tools and maintain them at a desired temperature.

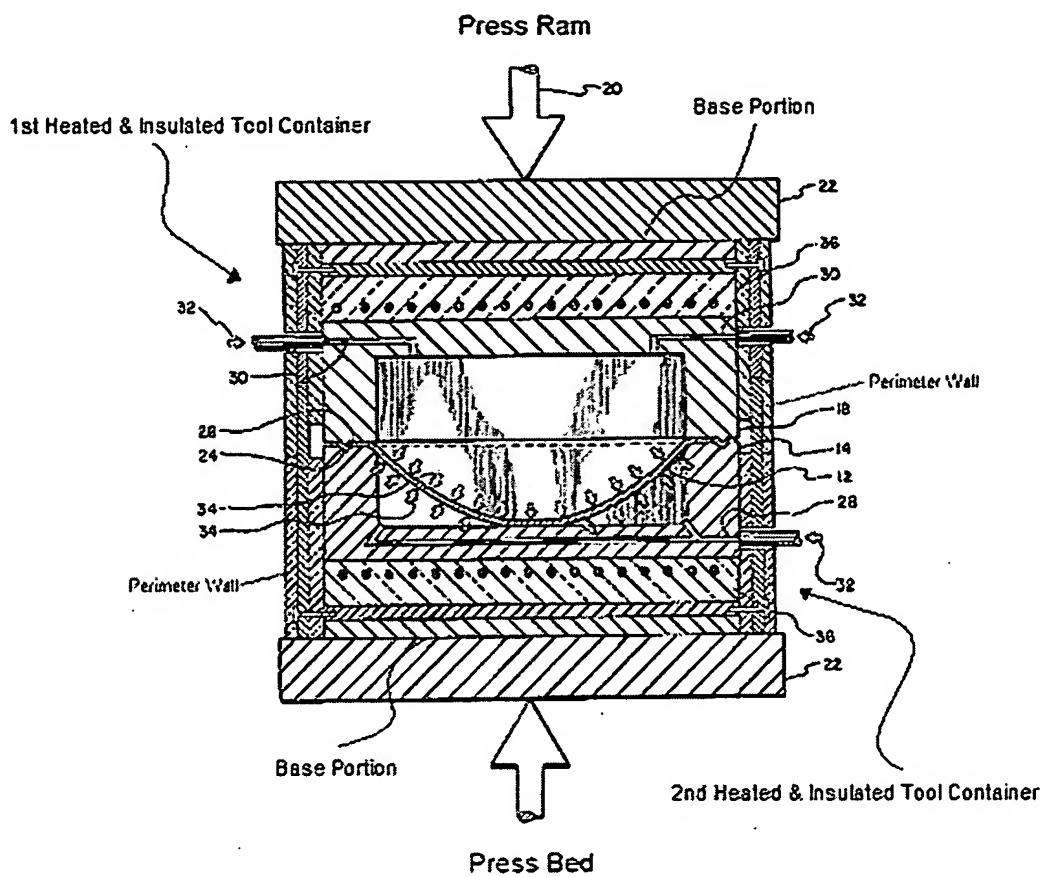
5. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ghosh (U.S. Patent # 4,352,280) and Morse (U.S. Patent # 3,551,952) in view of Herdzina (U.S. Patent # 5,277,047). Ghosh discloses a compression forming apparatus for sheet material having a first heated and insulated tool container (See FIG below) including a tool heater plate (heater 36) adapted for attachment to a platen (22) of a press (See col. 4, line 59), an insulation enclosure having a base portion (See FIG below) between the tool heater plate (36) and platen (22) (See col. 5, line 22) and a perimeter wall portion (See FIG below) extending in a substantially perpendicular direction away from the base portion and surrounding tool heater plate (36), a forming tool (upper die portion 18) mounted to the tool heater plate (36) such that the forming tool (18) is separately heated by the tool heater plate (36); and a second heated and insulated tool container (See FIG below), opposed to the first heated and insulated tool container (See FIG below), including a second tool heater plate (36b) adapted for attachment to an opposed platen (22b) of a press (See col. 4, line 59), a second insulation enclosure having a base portion between the second tool heater plate (36b) and the opposed platen (22b) and a perimeter wall portion (See FIG below) extending in a substantially perpendicular direction away from the base portion and surrounding second tool heater plate (36b), a second forming tool (lower die portion 14) mounted to the second tool heater plate (36b) such that the second forming tool (14) is separately heated by the second tool heater plate (36b). Ghosh discloses the invention substantially as



claimed except for wherein the apparatus closes together such that a portion of one of the insulation enclosures fits within a portion of the other insulation enclosure to define a closed insulation vessel. However, Morse discloses a heat shielded press having a first insulation enclosure (14) including a base portion between a first heater plate (16) and the press (12) and a perimeter wall and a second insulation enclosure (15) including a base portion positioned between the second heater plate (17) and the press (13) and a perimeter wall. Morse further discloses, as seen in figure 2, when the apparatus closes together a portion of the second insulation enclosure fits within a portion of the first insulation enclosure to define a closed insulation vessel. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the insulating plates of Ghosh with the insulation enclosures of Morse in order to eliminate heat loss to the surrounding environment. In addition, Morse discloses the use of a perimeter seal (51) mounted to the top (50) of the second insulation enclosure (15) and seals against the side of the first insulation enclosure (14). It would have been obvious to one having ordinary skill in the art at the time the invention was made to mount the seal (51) to the side of the first insulation enclosure (14) and seal against the top of the second insulation enclosure (15), since it has been held that rearranging parts of an invention involves only routine skill in the art. (*In re Japikse*, 86 USPQ 70). Ghosh in view of Morse discloses the invention substantially as claimed except for wherein a load bearing spacer is positioned between the first heater tool plate and platen and a second load bearing spacer is positioned between the second heater tool plate and platen. However, Herdzina discloses a conversion system tooling heater having a load bearing insulated spacer to minimize the heat loss to the lower chase. It is also noted that Ghosh does provide insulating plates to hold the heaters against the die and to



confine the heat to the die (See col. 5, line 11). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ghosh with a load bearing insulating spacer as taught by Herdzina in order to confine the heat to the die and minimize heat loss.



6. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ghosh (U.S. Patent # 4,352,280) in view of Morse (U.S. Patent # 3,551,952). Ghosh discloses a compression forming apparatus for sheet material having a first integrally heated heater plate (36a) mounted to a press bed with a first layer of insulation (See col. 5, line 11) positioned between the integrally heated heater plate (36a) and the press bed; a first forming tool (lower die

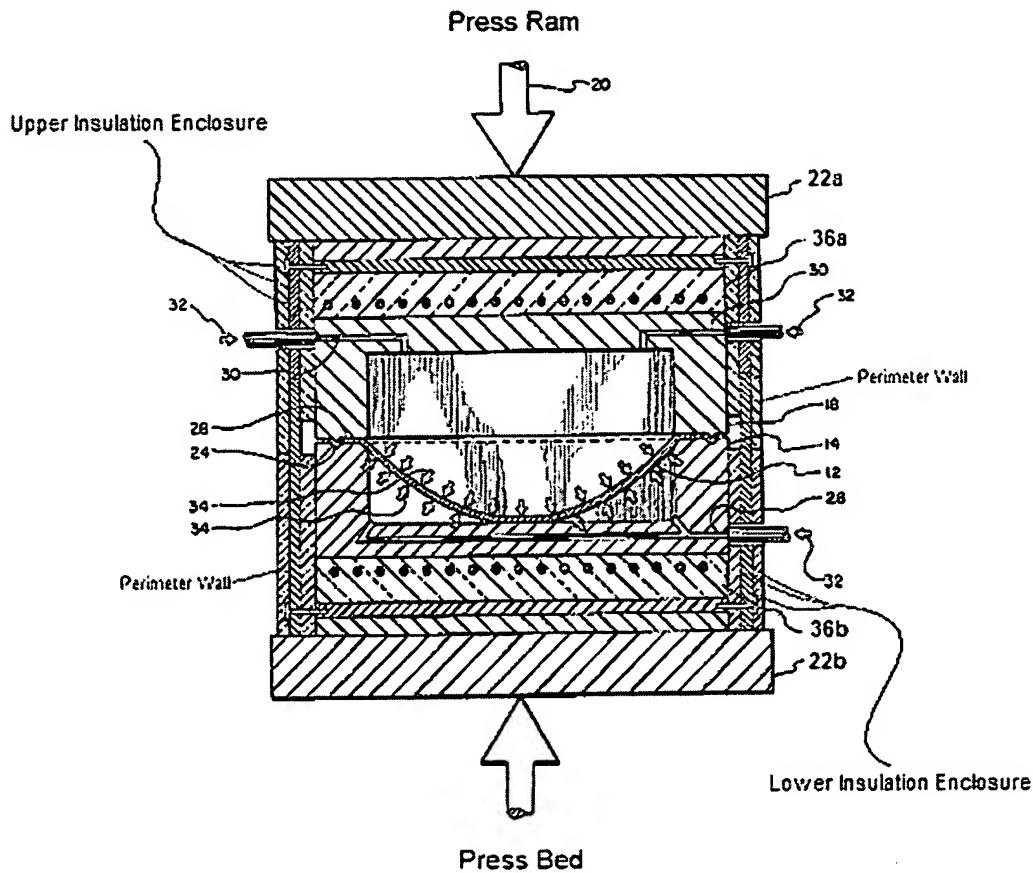


portion 14) mounted to the integrally heated heater plate (36a) whereby the first forming tool (14) is separately heated by the integrally heated heater plate; a second integrally heated heater plate (36b) mounted to a press ram with a second layer of insulation positioned between the second integrally heated heater plate (36b) and the press ram (See col. 5, line 11); a second forming tool (upper die portion 18) mounted to the second integrally heated heater plate whereby the second forming tool (18) is separately heated by the second integrally heated heater plate (36b); and first and second insulating plates (See FIG 2, cross-hatched perimeter of apparatus) partially surrounding at least one of the heater plates (36) and forming tools (14, 18). Although Ghosh does not disclose in the drawings a press bed or press ram, column 4, line 58 states that the apparatus shown in FIG 2 is attached to a press and it is known in the art that a press contains a press bed and a press ram, therefore the examiner asserts the above position that the first and second heated heater plates are mounted to a press bed and a press ram. Ghosh discloses the invention substantially as claimed except for when the apparatus is closed a portion of one of the insulation enclosures fits within a portion of the other insulation enclosure to define a closed insulation vessel. However, Morse discloses a heat shielded press having a first insulation enclosure (14) including a base portion between a first heater plate (16) and the press (12) and a perimeter wall and a second insulation enclosure (15) including a base portion positioned between the second heater plate (17) and the press (13) and a perimeter wall. Morse further discloses, as seen in figure 2, when the apparatus closes together a portion of the second insulation enclosure fits within a portion of the first insulation enclosure to define a closed insulation vessel. Therefore, it would have been obvious to one of ordinary skill in the art at the



time the invention was made to modify the insulating plates of Ghosh with the insulation enclosures of Morse in order to eliminate heat loss to the surrounding environment.

With regards to claim 14, Morse discloses the use of a perimeter seal (51) attached to one of the insulation enclosures (15). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Ghosh with a perimeter seal as taught by Morse in order to prevent the heat from escaping to the surrounding environment.



#### *Response to Arguments*

Applicant's arguments with respect to claims 1-3, 5-7, 9-11 and 13 have been considered but are moot in view of the new ground(s) of rejection.



***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Debra Wolfe whose telephone number is (571) 272-1904. The examiner can normally be reached Monday - Thursday 6am - 3:30pm with alternating Friday 6am - 2:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Derris Banks can be reached at (571) 272-4419. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Debra Wolfe  
Examiner  
Art Unit 3725

  
DERRIS H. BANKS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3700